Primary Standards Laboratory

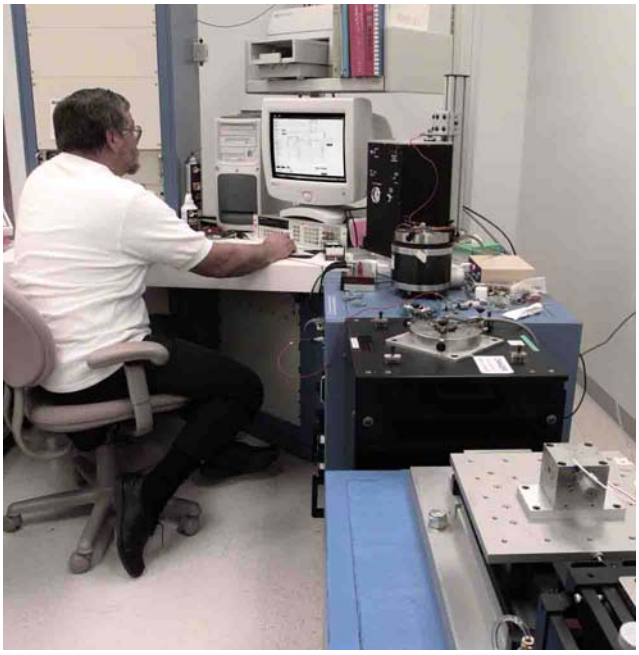
Metrology Program

Fact Sheet

Acceleration and Shock

The Primary Standards Laboratory (PSL) maintains a wide variety of primary acceleration and shock standards to assure accurate and traceable measurements for its customers. Capabilities include acceleration measurements to 50 kHz for a wide variety of accelerometers and shock pulses to 10,000 g.

While the automated vibration calibration system is designed to operate over a range of 1 Hz to 50 kHz, traceable calibrations are performed from 2 Hz to 10 kHz. Test parameters and data presentation instructions can be programmed for each calibration.



Automated Accelerometer Calibration System

The system will measure capacitance for piezoelectric accelerometers, output bias voltage for internal electronic accelerometers and resistance, zero measurand output, excitation voltage, damping, natural or resonant frequency, shunt, and simulated electrical calibration for piezoresistive accelerometers.
Traceability is established through direct comparison with a NIST-calibrated accelerometer.

Capabilities

•**ACCELERATION**	
1 Hz to 10 kHz	± 2.5%
•**SHOCK**	
100 to 10,000 g	± 4% to 8%

Major Resources

- Automated vibration measurement system
- Measurement of acceleration over temperature range -40° C to + 66° C
- Measurement of linear acceleration from 10 to 50,000 m/sec^2

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SAND2005-3635W Unlimited Release. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000.